

REMARKS

The Examiner is thanked for the thorough review and consideration of the present application. The Office Action dated March 24, 2005 has been received and its contents carefully reviewed.

By this Response, claims 18-20, 30 and 33-34 have been amended. No new matter has been added. Claims 18-20, 30 and 33-34 are pending in the application. Reconsideration and withdrawal of the objection and rejections in view of the above amendments and the following remarks are respectfully requested.

In the Office Action, claims 18, 19, 33 and 34 are objected to because of informalities. Applicants thank the Examiner for the suggested amendments and have amended claims 18, 19, 33 and 34. Accordingly, the objection is overcome. Withdrawal of the objection is requested.

In the Office Action, claims 18-20 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,266,118, issued to Lee et al. (hereafter "Lee"). Applicants respectfully traverse the rejection because Lee fails to teach or suggest each and every feature recited in the claims of the present application. In particular, Lee fails to teach an array substrate for an IPS-LCD device "wherein the portions of the common electrodes that do not continue entirely across the pixel region and the auxiliary pixel electrode form a virtual line parallel to the gate line" as recited in independent claim 18.

Lee also fails to teach an array substrate for an IPS-LCD device "wherein the portions of the common electrodes that do not continue entirely across the pixel region and the auxiliary pixel electrode form a virtual line parallel to the data line" as recited in independent claim 19.

Further, Lee fails to teach or suggest an array substrate for an IPS-LCD device "wherein the plurality of auxiliary electrodes cross the plurality of common electrodes and plurality of pixel electrodes" as recited in independent claim 20.

Because Lee fails to teach or suggest at least the above features of independent claims 18, 19 and 20, claims 18, 19 and 20 are not anticipated by Lee. Accordingly, claims 18-20 are allowable over Lee. Reconsideration and withdrawal of the rejection of claims 18-20 are respectfully requested.

In the Office Action, claims 33 and 34 are rejected under 35 U.S.C. § 130(a) as being unpatentable over Lee in view of U.S. Patent No. 5,977,562, issued to Hirakata et al. (hereafter "Hirakata"). Applicants respectfully traverse the rejection because neither Lee nor Hirakata, analyzed alone or in any combination, teaches or suggests the combined features recited in the claims of the present application. For example, Lee and Hirakata fail to teach or suggest an array substrate for an IPS-LCD device "wherein the portions of the common electrodes that do not continue entirely across the pixel region and the auxiliary pixel electrode form a virtual line parallel to the gate line" as recited in independent claim 33. Lee and Hirakata also fail to teach an array substrate for an IPS-LCD device "wherein the portions of the common electrodes that do not continue entirely across the pixel region and the auxiliary pixel electrode form a virtual line parallel to the data line" as recited in independent claim 34.

The Office Action concedes that Lee does not disclose all the features recited in independent claims 33 and 34. To remedy the deficient teachings of Lee, the Office Action relies upon the teachings of Hirakata. Applicants respectfully note that even if the teachings of Hirakata were used as suggested in the Office Action to modify the device of Lee, which Applicants do not concede there is proper motivation to do, the resulting device would fail to provide the combined features recited in independent claims 33 and 34 of the present application. Specifically, the resulting combination would fail to provide a device "wherein the portions of the common electrodes that do not continue entirely across the pixel region and the auxiliary pixel electrode form a virtual line parallel to the gate line" as recited in independent claim 33. Further, the resulting combination would also fail to provide a device "wherein the portions of the common electrode that do not continue entirely across the pixel region and the auxiliary pixel electrode form a virtual line parallel to the data line" as recited in independent claim 34.

Because no combination of Lee and Hirakata teaches or suggests the combined features recited in independent claims 33 and 34, claims 33 and 34 are allowable over any combination of Lee and Hirakata. Reconsideration and withdrawal of the rejection of claims 33 and 34 are respectfully requested.

In the Office Action, claim 30 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Lee in view of U.S. Patent No. 6,154,266, issued to Okamoto et al. (hereafter "Okamoto"). The Office Action further rejects claim 30 under 35 U.S.C. § 103(a) as being unpatentable over

Lee in view of U.S. Patent No. 6,097,463, issued to Chen (hereafter "Chen"). Applicants respectfully traverse the rejections because neither Lee, Okamoto nor Chen, analyzed alone or in any combination, teaches or suggests the combined features recited in independent claim 30. For example, Lee, Okamoto and Chen fail to teach or suggest an array substrate for an LCD-device that includes "an alignment layer having both first and second rubbing directions, the first and second rubbing directions corresponding to the first and second domains of the pixel region, respectively, wherein the first and second rubbing directions are symmetrical with respect to a line parallel to the gate line" as recited in independent claim 30.

To remedy the deficient teachings of Lee, the Office Action relies upon Okamoto and Chen. However, Applicants respectfully submit that even if the teachings of Okamoto and Chen were used to modify the device of Lee, which applicants do not concede there is proper motivation to do, the resulting device would fail to provide the combined features recited in the claims of the present application.

For example, Okamoto discloses a method of manufacturing a liquid crystal display device in which "the rubbing treatment is conducted twice so that a first rubbing direction (13) set in the first rubbing set is opposite to a second rubbing direction (14) set in the second rubbing step by 180 degrees" (see, Abstract). Thus, even if Lee were modified to include a rubbing treatment that is conducted twice, as disclosed in Okamoto, the resulting device would fail to teach "an alignment layer having both first and second rubbing directions, the first and second rubbing directions corresponding to the first and second domains of the pixel region, respectively" as recited in independent claim 30.

Applicants respectfully note that Chen is directed to a TN mode liquid crystal display device. The TN mode device in Chen includes a common electrode 117 on the upper substrate 111 and a pixel electrode 119 on the lower substrate 110. Each substrate 110, 111, includes a pair of alignment films 118, 120, respectively. (See, FIG. 4) "In consideration of the pair of alignment films on the upper and lower substrates, the unrubbed alignment film surface on which each of the second homeotropic alignment films 118b and 120b is deposited, and the rubbed alignment film surface in which each of the first homeotropic alignment films 118a and 120a is exposed are arranged opposite to each other. Therefore, liquid crystal molecules 125 are inclined in opposite directions in adjacent pixels between the alignment films 118 and 120" (col. 7, lines 25-34). Applicants submit even if this teaching of Chen were used to modify the device

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in Lee, the resulting device would fail to provide "an alignment layer having both first and second rubbing directions, the first and second rubbing directions corresponding to the first and second domains of the pixel region, respectively" as recited in independent claim 30.

Based upon the above discussions, Applicants respectfully submit neither Lee, Okamoto nor Chen, analyzed alone or in any combination, teaches or suggests the combined features recited in independent claim 30. Accordingly, claim 30 is allowable over Lee, Okamoto and Chen. Reconsideration and withdrawal of the rejection of claim 30 are respectfully requested.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue. If the Examiner deems that a telephone conversation would further the prosecution of this application, the Examiner is invited to call the undersigned at (202) 496-7500.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37 C.F.R. §1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911. A duplicate copy of this sheet is enclosed.

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Respectfully submitted,

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